

PHYSICAL ACTIVITY OF PARK VISITORS IN THE
SACRAMENTO-CENTRAL VALLEY

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ABSTRACT

PHYSICAL ACTIVITY OF PARK VISITORS IN THE
SACRAMENTO-CENTRAL VALLEY

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The purpose of the study was to conduct a secondary analysis of the socio-demographics and physical activity levels of park users in the Sacramento-Central Valley region from the 2012 California Opinions and Attitudes Survey on Outdoor Recreation. The study was delimited to the parameters of gathering information via a telephone survey during 2012. The major conclusions indicate: a. the subjects are mostly White or Hispanic, middle-aged to senior status, married, and are part of the lowest socio-economic status, b. park visitation differs between groups as Hispanics visit more often and Non-Hispanics stay longer, and c. physical activity levels differ between groups as Hispanics are more vigorously active than Non-Hispanics. Recommendations include: to continue relevant services and update services in need, to promote/market physical activity to the segmented groups, and to collaborate with public health agencies.

Keywords: socio-demographics, physical activity, Sacramento-Central Valley, Hispanic, outdoor recreation

TABLE OF CONTENTS

	PAGE
ABSTRACT.....	ii
TABLE OF CONTENTS.....	iii
LIST OF TABLES.....	v
Chapter 1 INTRODUCTION AND REVIEW OF LITERATURE.....	1
Background of Study	1
Review of Literature	3
Physical activity in park settings.....	3
Factors influencing park visitation.....	5
Summary.....	9
Purpose of the Study	9
Research Questions	9
Delimitations	10
Limitations	10
Assumptions.....	11
Definition of Terms.....	11
Chapter 2 METHODS AND PROCEDURES.....	12
Description of Subjects	12
Description of Instrument	12
Description of Procedures	13
Method of Data Analysis	14
Chapter 3 PRESENTATION OF THE RESULTS.....	16

Demographics	16
Park Visitation.....	19
Physical Activity.....	22
Chapter 4 DISCUSSION AND CONCLUSIONS.....	24
Summary	24
Discussion	25
Conclusions	28
Recommendations	29
REFERENCES	30
TOC APPENDICES	33
Appendix A Questionnaire.....	34
Appendix B Script.....	43

LIST OF TABLES

TABLE	PAGE
Table 1. Race and Ethnicity of the Subjects by Frequency and Percentage	17
Table 2. Ages of the Subjects by Frequency and Percentage.....	17
Table 3. Marital Status of the Subjects by Frequency and Percentage.....	18
Table 4. Income Levels of the Subjects by Frequency and Percentage.....	18
Table 5. Park Visitation According to Frequency and Percentage.....	19
Table 6. Park Visitation by Non-Hispanic/Hispanic Groups According to Frequency and Percentage.....	20
Table 7. Park Visitation Time According to Means and Standard Deviations.....	21
Table 8. Park Visitation Time within the Last Year According to Frequencies and Percentages.....	21
Table 9. Park Visitation Time by Non-Hispanic/Hispanic Groups According to Means and Standard Deviations.....	22
Table 10. Physical Activity Time by Means and Standard Deviations.....	23
Table 11. Physical Activity Time by Non-Hispanic/Hispanic Groups According to Means and Standard Deviations.....	23

Chapter 1

INTRODUCTION AND REVIEW OF LITERATURE

Background of Study

The California State Parks Planning Division is designed to assist public and other outdoor recreation providers. Their work consists of conducting and analyzing research, working with others to plan for outdoor recreation areas, and communicating related needs and opportunities for leaders in the field, as well as professionals, officials, and the public (California State Parks, 2013). The division's responsibilities include outdoor recreation planning advice for local, state, and federal parks and recreation agencies.

This service is better known as the Statewide Comprehensive Outdoor Recreation Plan (SCORP) or the California Outdoor Recreation Plan (CORP). The survey of Public Opinions and Attitudes on Outdoor Recreation in California was established for evaluating the demand and needs for outdoor recreation resources and facilities (California State Parks, 2008). This survey measures Californians' participation, demand, opinions, attitudes, and values for outdoor recreation activities and experiences. The survey originated in 1987, and is repeated every five years; similar questions are asked for benchmarking purposes and additional questions are added as needed (California State Parks, 2008). The 2008 and 2012 studies measured several variables including socio-demographics and physical activity levels. Supplementary demographics of age, ethnicity, level of education, income, and gender were collected from residents, which are grouped into regions based on the 2010 census for the most recent survey.

Additional questions have included levels and frequency of physical activity, to collect

data on the relationship between health and outdoor recreation (California State Parks, 2008).

Due to the growing obesity rates in the U.S. and decline in physical activity, public health is a national concern. The Center for Disease Control and Prevention [CDC], (2012b) has determined that:

During the past 20 years, there has been a dramatic increase in obesity in the United States and rates remain high. More than one-third of U.S. adults (35.7%) and approximately 17% (or 12.5 million) of children and adolescents aged 2—19 years are obese. (para 1).

Obesity is costly and affects some groups more than others because of complex socio-demographic factors. In 2008, medical costs associated with obesity were estimated at \$147 billion; the medical costs for people who are obese were \$1,429 higher than those of normal weight (CDC, 2012a). Studying these rates by race and ethnicity, the CDC (2012a) found Non-Hispanic blacks to have the highest age-adjusted rates of obesity (49.5%) compared with Mexican Americans (40.4%), all Hispanics (39.1%), and non-Hispanic whites (34.3%). Socio-demographics affect participation in healthy lifestyles and are often constraints for minority groups. For example, gym memberships can be too expensive for this population, which creates a greater opportunity for parks to facilitate this aspect of their lives.

The SCORP survey is conducted in five year increments to remain updated on the current population because previous surveys will no longer be a true representation of California's population. California has experienced several changes to its demographic makeup. The information from the survey gives park and recreation professionals an

insight into the recreation needs of Californians (California State Parks, 2008). This study, a portion of the 2012 survey, specifically addressed the residents of the Sacramento-Central Valley region, which will benefit those park and recreation administrators with the information to make decisions about their services and facilities.

Review of Literature

Research for this review of literature was conducted at Robert E. Kennedy Library on the campus of California Polytechnic State University, San Luis Obispo. In addition to other resources, the following online databases were utilized: SPORTDiscus, Hospitality and Tourism Complete, and PsychINFO. This review of literature is organized into the following topic areas: physical activity in park settings and factors influencing park visitation.

Physical activity in park settings. This section of the review of literature focuses on measuring physical activity in parks. Examining physical activity during park visitation is necessary to reflect on how parks are being used. Determining physical activity levels is important to reflect society's health. Health is an integral part of parks and recreation as the field continues to promote and measure healthy decisions and lifestyles.

Parks are important places for physical activity and public health. Wilhelm Stanis, Schneider, and Anderson (2009a) conducted a study that assessed the leisure time physical activity, constraints, and negotiation strategies for state park visitors. They found that the majority of respondents participated in moderate to vigorous activity at the park during the last 12 months. Parks and recreation areas were among the top three

locations for physical activity. Constraints were categorized (from greatest to least impact) by interpersonal, structural, and intrapersonal. Interpersonal constraints of “family obligations” or “family/friends have lack of time” were the greatest; structural constraints were a “lack of time” and “too far from home”; Intrapersonal constraints included “like to do other things for recreation” (Wilhelm Stanis et al., 2009a, p. 29). Respondents’ negotiation strategies to participate in leisure time physical activity (despite constraints) were mostly financial-management, followed by cognitive and time-management strategies (Wilhelm Stanis et al., 2009a). There are many management and planning implications derived from this study. First, park managers can move forward from awareness of the importance of parks for leisure time physical activity to documentation of physical activity in parks. Second, managers can attend to the visitor constraints and work to help with negotiation strategies. Lastly, park administrators could use these findings to promote the use of parks for leisure time physical activity in coordination with public health agencies and resources (Wilhelm Stanis et al., 2009a)

Similar to the management implications of the Wilhelm Stanis et al. (2009a) study, Kruger, Mowen, and Librett (2007) explored improving measurements on physical activity leisure time in parks and recreation, as well as increasing collaboration for public health goals. The study was a review of surveillance systems in public health and parks and recreation, as well as related discussions at the 2006 Cooper Institute (Kruger et al.). Public health surveillance systems track physical activity in population trends over time through surveillance data, survey questionnaires, and self-reported studies. A variety of methods are used in measuring physical activity, which include heart rate, time, or number of steps taken (Kruger et al.). Parks and recreation surveillance systems use

surveys and self-reported studies to measure outdoor recreation, park use, and user characteristics. Common topics from these surveys include activity types, trends, travel patterns, and attitudes toward park resources (Kruger et al.). In developing a collaborative framework between public health and parks and recreation, there are many challenges in defining and implementing consistent measurements for physical activity and park visitation. Four proposals were developed from this study: incorporate more detailed measures of leisure time physical activity and active park visits into surveillance systems for parks; incorporate key park, recreation, and leisure items into existing public health surveillance efforts; conduct more frequent assessments of active park visits and leisure time physical activity; and establish public health physical activity objectives for parks and recreation and for active outdoor recreation (Kruger et al.). As stated in Wilhelm et al. (2009a), the conjunction of park and recreation departments and public health services can work together to educate the communities about physical activity on public lands. Bruton et al. (2011) also studied the partnerships between parks and recreation agencies and community/health organizations in North Carolina. Results showed that, “Creating sustainable multi-sector and interdisciplinary partnerships is critical to developing comprehensive strategies for promoting physical activity” (Bruton et al., 2011, p. 62). In order to help prevent obesity and reduce these rising levels of inactivity, parks and recreation agencies must play a larger role in community and public health.

Factors influencing park visitation. This section of the review of literature is an exploration of research conducted on socio-demographics and park visitation. Socio-demographics play a role in the characteristics and patterns of health, physical activity,

and park visitation. Assessing the factors of race/culture, age, gender, location, and income is relevant to better understand individual's needs. These factors affect decisions, constraints, and motivators to participate in physical activity and use parks and recreational areas.

Race and ethnicity appear to play an important role in choices to use parks for physical activity. Cronan, Shinew, Schneider, Stanis, and Chavez (2008) examined Latino immigrants and their use of parks for physical activity. They studied both race and culture, as well as gender for park use. Although typical for self-reported studies, both men and women reported higher levels of activity than other studies. This inflation could also be the result of samples from a majority of repeat visitors to the study sites (Cronan et al.). Respondents' BMI fell into the overweight category despite that half of the respondents reported that they were at the park for physical activity. The authors found that the park was the main place for physical activity for the majority of respondents. In order of frequency, respondents reported their physical activity taking place in the study site park, at home, at a different parks/recreation area, a fitness center, and at school (Cronan et al.). Two significant differences between genders were that women reported more physical activity at home and men reported physical activity at a park. The main activities in a park included playing with kids, relaxing, picnicking, and walking/hiking (Cronan et al.).

Similar to the Cronan et al. (2008) research, Shores and West (2008) conducted a study of African Americans' park visitation and physical activity in community parks. Their activity type in parks was analyzed in conjunction with age, gender, and park location. Overall, children were frequently active at parks and were the most vigorously

active through climbing and playing. Boys and girls were at a moderate activity level through sports or walking (Shores & West). Teens did not visit as often, but when they did they were vigorously active through a variety of sports (Shores & West). Adults were found to be sedentary overall by mostly picnicking and sitting during their park visits (Shores & West).

There are several constraints that contribute to the frequency of park visitation. Wilhelm Stanis, Schneider, Chavez, and Shinew (2009b) studied visitor constraints to physical activity in parks through race and ethnicity. Results indicated that all groups (Asian, Black/African American, non-Hispanic/Latino Whites, and Hispanic/Latinos of all races) found their greatest constraints to be time, family obligations, and a lack of energy. Overall, constraints were greater for racially diverse groups, especially the Hispanic/Latino visitors (Wilhelm Stanis et al., 2009b). According to Cronan et al., (2008) respondents' most common constraints were family obligations and lack of time. This study also concluded that important constraints for Latina women were focused around safety concerns. Another important constraint factor to park visitation was location. Physical activity is more common at parks that are close to urban areas as oppose to rural areas (Cronan et al.). Shores and West (2008) found differences in park visitation by location as the neighborhood park had extremely low levels of participation from African Americans. The other parks were called Extreme, Waterfront, and City park, which all had a fairly equal amount of participation, the City park being the most popular (Shores & West). Mowen, Orsega-Smith, Payne, Ainsworth, and Godbey (2007) studied the relationship between park proximity and social support in park visitation and physical activity of older adults. They found that perceived park proximity had a direct

relationship to park visitation and those that lived in walking distance were more likely to be frequent visitors.

There are many influences that contribute to the frequency of park visitation. Ries et al., (2008) conducted a study of physical activity at recreational facilities for African Americans ages 14-18. The authors used interviews and observations at high schools and recreational facilities in Baltimore, Maryland. They determined that influences were grouped by factors of physical, social, organizational, and economic environments. The physical environmental factors included poor maintenance, far proximity to home, and limited availability and access. As mentioned from Cronan et al. (2008) and Shores and West (2008), the park location makes a difference in participation. The next group of factors is the social environmental influences, which were safety concerns and participation from peers (Ries et al.). Again, safety concerns can have a large impact on participation, which was seen as a constraint in the Cronan et al. study. For the organizational environmental factors, Ries et al. concluded a lack of desired activities, activities geared toward the youth, and issues with the hours of operation. From the Shores and West study it was evident that teens were interested in playing sports vigorously, which would also be a preferred activity for these teenagers. The last group of factors is the economic environmental influences, which resulted in the lack of financial means and transportation constraints to the park (Ries et al.). From Shores and West the most popular park was the City park, which could reflect the greater amount of access through public transportation or proximity/location. Knowing the influences and constraints of these teenagers is useful for recreation facility's managers as they will be

able to make necessary adjustments to include or encourage this group in physical activity.

Summary. Physical activity in parks is important for society's leisure time and health. Due to the growing rates of obesity and inactivity of the U.S. population, the promotion and measurement of physical activity is necessary. Parks and recreation agencies need to join together with public health to encourage physical activity. Physical activity and park visitation vary depending on a number of socio-demographic influences. Minorities also have different perceptions and uses of parks for physical activity. Previous research shows several influences and constraints that determine participation level in physical activity and park visitation. Understanding these influences and constraints will help improve parks and recreation services for the varying communities across the nation. Further research is needed in the area of socio-demographics and physical activity in parks as the demographics of the U.S. change and human services work to progress and improve the quality of life.

Purpose of the Study

The purpose of the study was to conduct a secondary analysis of the socio-demographics and physical activity levels of park users in the Sacramento-Central Valley region from the 2012 California Opinions and Attitudes Survey on outdoor recreation.

Research Questions

This study attempted to answer the following research questions:

1. What are the descriptive demographics of the population?

2. Does frequency of park visitation differ by Non-Hispanic/Hispanic groups?
3. Do physical activity levels differ by Non-Hispanic/Hispanic groups?

Delimitations

This study was delimited to the following parameters:

1. Information on users was gathered from Sacramento-Central Valley residents.
2. A secondary analysis of socio-demographics, frequency of park visitation, and physical activity levels from the 2012 California Opinions and Attitudes Survey on outdoor recreation were analyzed.
3. The data were collected during 2012.
4. Information for this study was gathered using a telephone survey method.

Limitations

The study was limited by the following factors:

1. The study was conducted through the use of telephone surveys, in which identification was verified only through voice.
2. A possible sampling or selection bias could have occurred through the population that was willing to participate.
3. The exact location and environment of the respondents participating was unknown.
4. Using the telephone allows people to hang-up or not respond due to caller identification.

Assumptions

The study was based on the following assumptions:

1. It was assumed that the respondents were the people they claim to be.
2. It was assumed that the participants would respond honestly and to the best of their knowledge.
3. It was assumed that the respondents were not distracted during the survey.

Definition of Terms

The following terms are defined as used in this study:

Physical activity leisure time/leisure time physical activity. includes purposeful exercise, sports and other non-purposeful movements through activities such as play or dance (Henderson & Bialeschki, 2005)

Physical activity levels. scale of intensity during exercise

Socio-demographics. race/ethnicity, culture, age, gender, location, income, education level

SCORP. statewide comprehensive outdoor recreation plan

Chapter 2

METHODS AND PROCEDURES

The purpose of the study was to conduct a secondary analysis of the socio-demographics and physical activity levels of park users in the Sacramento-Central Valley region, from the 2012 California Opinions and Attitudes Survey on outdoor recreation.

The organization of this chapter flows from the description of the subjects, to the description of the instrument, to the description of procedures, and finally to the method of data analysis.

Description of Subjects

The subjects of this study were residents of the Sacramento-Central Valley, one of the seven geographic regions that account for California's population. From the total of 3,700 usable surveys from the state, there were 512 respondents from this region. These subjects were selected through random probability sampling of households. The sample was stratified to be closely comparable to county/urban area populations as identified in 2010 U.S. Census data. Qualifications to participate in this study included legal adult age and residential status within the households.

Description of Instrument

The telephone survey was comprised of 13-15 questions, depending on the respondent's answers. The questions were organized by the independent variables of demographics at the beginning and end of the survey, and the dependent variables of park visitation and physical activity levels in the middle. The content of the demographic

questions included age, gender, education, marital status, income, and racial/ethnic backgrounds. The content of the independent variables of park visitation and physical activity levels included frequency, duration, and activities performed. The questions were formatted as close-ended and discrete data answers of yes/no, groupings by ranges or categories, and times in days/hours/minutes. The options of “do not know” and refraining to answer were included for all questions. The only partially-open ended question pertains to race/ethnicity under “other: please specify.” The instrument questions were designed from previous SCORP surveys conducted in 1987, 1992, 1997, 2002, and 2008. The physical activity questions were added to the survey in 2008. The design of the instrument was formulated from California State Park personnel and Recreation, Parks, and Tourism Administration professors Dr. Bill Hendricks, Dr. Jersuha Greenwood, and Dr. Kelly Bricker. The Chair of the Human Subjects Committee approved the research design phase of the study. Following the pilot study and Spanish translations of the surveys and completion of the research design, the project was again submitted to the Human Subjects Committee for final research approval. The instrument is provided in Appendix A and the script developed for the telephone survey is provided in Appendix B.

Description of Procedures

This study was created from a larger study that was comprised of multiple surveys and a longer timeframe. This particular study was conducted from winter 2012 through spring 2013. Following initial meetings with personnel from the Department of Parks and Recreation (DPR), the telephone interview survey, which was approximately 15

minutes completion time, was designed. A vendor, Intelliq, collected the data and presented it to the research team as data were collected. Intelliq specializes in market research techniques and has a 25-station computer assisted telephone-interviewing facility for random digit dialing. Additional follow-up surveys were conducted as part of the original larger study.

Method of Data Analysis

After the data collection and presentation from Intelliq, the following research questions were addressed through the instrument's questions.

To determine the descriptive demographics of the population, demographic questions were analyzed. Questions of gender, race, age, marital status, and income levels were measured. Discrete data were analyzed through frequency and percentage tables for each demographic variable.

The differences between frequency of park visitation by Non-Hispanics and Hispanics were measured through demographic data of racial background, as well as park visitation questions of frequency and amount of time spent in the park. Discrete data were analyzed through frequencies and percentages, which were then cross-tabulated between the demographic and park visitation questions, and analyzed with a chi-square. Continuous data were analyzed through means and standard deviations. Differences between socio-demographics and park visitation were tested with ANOVAs at a p-value of 0.05.

The differences between physical activity levels of Non-Hispanics and Hispanics were measured through the same demographic data of racial background, and physical

activity questions of time spent being active, vigorously active, and moderately active during the most recent park visit. Discrete data were analyzed with frequencies and percentages of the means and standard deviations from the continuous data. Differences between racial groups and physical activity levels were tested with ANOVAs at a p-value of 0.05.

Chapter 3

PRESENTATION OF THE RESULTS

The purpose of the study was to conduct a secondary analysis of the socio-demographics and physical activity levels of park users in the Sacramento-Central Valley region from the 2012 California Opinions and Attitudes Survey on Outdoor Recreation. This study was conducted through a telephone survey administered by the research vendor Intelliq. The sample size collected from this region included 512 participants.

Demographics

This first section presents the results of the demographic questions. The following categories of socio-demographics include gender, race, age, marital status, and income levels. Of the 512 subjects participating in the study females, (n=305, 60%) outnumbered males (n=207, 40%). Race and ethnicity of the subjects are presented in Table 1. The majority of respondents were non-Hispanic (62%) or Hispanic (38%); the large majority of Non-Hispanics being White (52%). The participants' age ranges were fairly spread out evenly, with most of the respondents in the "65+" (23%) category and the least amount in the "18-24" (12%) category. For a complete presentation of these findings, see Table 2. The marital status of the participants is presented in Table 3. Over half of the respondents' status is classified as "Married," while about a quarter was Single, never married." As shown in Table 4, the income level of "Under \$20,000" represents the highest percentage of the respondents' income. However, many participants did not disclose their income through the "Don't Know" (4%) category and "Refused" (17%) category.

Table 1
Race and Ethnicity of the Subjects by Frequency and Percentage

Race and Ethnicity	<i>f</i>	%
Hispanic/Latino of Mexican Descent	167	33.2
Other Hispanic/Latino	23	4.6
White (non-Hispanic)	261	51.9
Black or African American	14	2.8
Asian	18	3.6
Native Hawaiian-Other Pac. Islander	4	0.8
American Indian or Alaska Native	13	2.6
Other	17	3.4

Note. Due to rounding of numbers, percentages do not equal 100%. N=503

Table 2
Ages of the Subjects by Frequency and Percentage

Age Ranges	<i>f</i>	%
18-24	60	11.7
25-34	68	13.3
35-44	76	14.8
45-54	108	21.1
55-64	79	15.4
65+	118	23.0

Note. Due to rounding of numbers, percentages do not equal 100%.

Table 3
Marital Status of the Subjects by Frequency and Percentage

Status/Classification	<i>f</i>	%
Single, never married	125	24.4
Married	279	54.5
Living with partner	13	2.5
Separated	6	1.2
Divorced	36	7.0
Widowed	35	6.8

Note. Due to rounding of numbers, percentages do not equal 100%.

Table 4
Income Levels of the Subjects by Frequency and Percentage

Income Levels	<i>f</i>	%
Under \$20,000	88	17.2
\$20,000 to under \$35,000	71	13.9
\$35,000 to under \$50,000	67	13.1
\$50,000 to under \$75,000	64	12.5
\$75,000 to under \$100,000	60	11.7
\$100,000 to under \$150,000	39	7.6
\$150,000 to under \$200,000	11	2.1
\$200,000 or more	6	1.2
Don't Know	20	3.9
Refused	86	16.8

Park Visitation

This next section presents the findings of the park visitation questions. Park visitation was measured through time periods, months, days, minutes, and hours. Park visitation questions compared non-Hispanic and Hispanic groups.

Table 5 illustrates the overall participants who visited parks within the ranges of months or years. Over half of the visitors had visited a park in the last month and most had visited in the last 12 months. Table 6 shows the break-down of participants based on Non-Hispanic and Hispanic groups. Percentages are based off of the response rate for each category. Over half of the Non-Hispanic respondents and almost three quarters of Hispanic respondents had visited a park in the last month.

Table 5
Park Visitation According to Frequency and Percentage

Time Period	<i>f</i>	%
Last Month	316	61.7
Last Six Months	88	17.2
Last 12 Months	43	8.4
1 up to 2 Years Ago	19	3.7
2 up to 3 Years Ago	8	1.6
3 up to 4 Years Ago	5	1
4 up to 5 Years Ago	2	0.4
5/More Years Ago	23	4.5
Never Visited	1	0.2

Note. Due to rounding of numbers, percentages do not equal 100%.

Table 6
Park Visitation by Non-Hispanic/Hispanic Groups According to Frequency and Percentage

Time Period	Race: Broad Hispanic			
	Non-Hispanic		Hispanic	
	<i>f</i>	%	<i>f</i>	%
Last Month	185	58.7	128	68.4
Last Six Months	54	40.9	33	55.0
Last 12 Months	32	40.5	10	38.5
1 up to 2 Yrs Ago	14	33.3	5	31.3
2 up to 3 Yrs Ago	5	11.9	3	18.8
3 up to 4 Yrs Ago	4	9.5	1	6.3
4 up to 5 Yrs Ago	1	2.4	1	6.3
5/More Yrs Ago	17	40.5	6	37.5
Never Visited	1	2.4	0	0

Note. “Yrs.” stands for years. Percentages do not equal 100%.

The overall sample’s amount of time spent while visiting parks is shown in Table 7. Time is measured by mean score and standard deviation of each category. Respondents spent a range of time visiting from about 40 minutes to four and a half hours or three to six days within the last visit or month. Table 8 shows the frequencies and percentages of the overall population’s visits within the last year. Just under half of the respondents had visited a park in the last month, while the other half visited a few times throughout the year. Table 9 shows the break-down of participants based on Non-Hispanic and Hispanic groups. A T-test was used to determine the differences of answers between racial groups. It is statistically significant (p-value of .03) that Non-Hispanics spent more time in minutes in their last park visit compared to Hispanics.

Table 7
Park Visitation Time According to Means and Standard Deviations

Time Period	Mean	Std. Deviation
Days in Last Month	5.9	7.1
Minutes-Last Visit	39.3	23.1
Hours-Last Visit	4.5	7.1
Days-Last Visit	3.6	5.1

Table 8
Park Visitation Time within the Last Year According to Frequencies and Percentages

Times Visited	<i>f</i>	%
2 + Times per Week	76	14.8
1 Time per Week	39	7.6
1-2 Times per Month	108	21.1
Several (3-11) Times Per Year	132	25.8
1-2 Times per Year	97	18.9
Not at all	47	9.2

Note. This information relates directly to the category “Visits-Last Year” in the following Table 9.

Table 9
Park Visitation Time by Non-Hispanic/Hispanic Groups According to Means and Standard Deviations

Time	Race: Broad Hispanic				P-Value
	Non-Hispanic		Hispanic		
	Mean	Std. Deviation	Mean	Std. Deviation	
Day-Last Mo.	5.8	7.3	6.1	6.8	.66
Min.-Last Visit	45.2	25.6	29.1	13.2	.03*
Hrs-Last Visit	4.3	6.5	4.9	8.5	.49
Day-Last Visit	3.6	5.4	3.8	4.2	.83
Visits-Last Yr	5.8	14.1	4.3	10	.18

Note. “Day” short for days; “Mo.” stands for month; “Min.” stands for minutes; “Hrs” short for hours. *P-values below .05 are significant.

Physical Activity

This last section presents the findings of the time spent being physically active during park visits. Physical activity time is measured through minutes and hours for overall time as well as vigorous and moderate levels. Physical activity questions compared non-Hispanic and Hispanic groups.

A complete list of the overall participants’ physical activity time during park visitation is shown in Table 10. A range from approximately 1/2 hour to a nearly four hours is spent being physically active. Time is further broken down into vigorous and moderate physical activity levels. Table 11 portrays the break-down of participants’ physical activity time based on Non-Hispanic and Hispanic groups. A T-test was used to determine the differences of answers between racial groups. It is statistically significant (p-value of .004) that Hispanics were more vigorously active in minutes during their park visit compared to Non-Hispanics.

Table 10
Physical Activity Time by Means and Standard Deviations

Time	Mean	Std. Deviation
Overall Minutes	24.0	21.6
Overall Hours	3.9	5.3
Vigorous Minutes	11.6	15.5
Vigorous Hours	2.4	4.3
Moderate Minutes	25.6	31.2
Moderate Hours	3.2	3.9

Table 11
Physical Activity Time by Non-Hispanic/Hispanic Groups According to Means and Standard Deviations

Time	Race: Broad Hispanic				P-Value
	Non-Hispanic		Hispanic		
	Mean	Std. Deviation	Mean	Std. Deviation	
Overall Min	23.4	24.4	24.4	18.1	.77
Overall Hrs	3.6	4.4	4.4	6.5	.27
Vigorous Min	9.4	15.2	15.3	15.7	.004*
Vigorous Hrs	2.1	3.3	2.9	5.4	.31
Moderate Min	24.9	24.8	26.4	37.6	.75
Moderate Hrs	3	3.3	3.6	4.8	.33

Note. “Hrs” stands for hours; “Min” stands for minutes. *P-values below .05 are significant.

The results presented in this chapter conclude the socio-demographics and physical activity levels of the current Sacramento-Central Valley park users. A detailed summary and discussion of the findings will follow in Chapter 4.

Chapter 4

DISCUSSION AND CONCLUSIONS

The SCORP survey is used to assess the outdoor recreation needs of Californians every five years. This information is vital in order for park and recreation professionals to understand their participants and to make any necessary improvements in services and programs. This concluding chapter will include the following: a summary of the study, a discussion of the findings, limitations, conclusions based on research questions, implications of the findings, and recommendations for future research.

Summary

The purpose of the study was to conduct a secondary analysis of the socio-demographics and physical activity levels of park users in the Sacramento-Central Valley region from the 2012 California Opinions and Attitudes Survey on Outdoor Recreation. The study was delimited to the parameters of gathering information from the Sacramento-Central Valley residents via a telephone survey during 2012. The SCORP survey was established for evaluating the demand and needs for outdoor recreation resources and facilities. Public health is a national concern due to the decline in physical activity and increase in obesity rates in the U.S. Examining physical activity in park settings is necessary to reflect how parks are used for public health. Several factors influence park visitation such as socio-demographics.

The 512 subjects of this study were residents of the Sacramento-Central Valley region and were selected through a random probability sample of households that is

similarly stratified to county/urban populations from the 2010 U.S. Census data. The telephone survey was comprised from previous SCORP surveys, California State Park personnel, and Recreation, Parks, and Tourism Administration researchers at Cal Poly, San Luis Obispo and The University of Utah. This study was comprised from a larger study and data were collected from the telephone survey throughout 2012 by Intelliq. The data of demographics, park visitation, and physical activity were analyzed through statistics of frequencies and percentages, as well as means and standard deviations.

The majority of respondents were female, White or Hispanic, middle-aged to senior status, married, and had income levels mostly under \$20,000 up to \$100,000. The majority of participants had visited a park in the last month to last six months. Segmenting this by Non-Hispanics and Hispanics, Hispanics had higher rates in the last month to six months. Amount of time spent at parks was measured in minutes, hours, days, and days per month. The highest frequency in the last year was several (3-11) visits. Overall, Non-Hispanics spent more time in parks than Hispanics. Physical activity time was measured in minutes and hours at overall, vigorous, and moderate levels. It was found that Hispanics are more vigorously active than Non-Hispanics.

Discussion

The findings reveal substantial information on the sample's characteristics and behaviors. As discussed, the participants are mostly White or Hispanic and part of a very low socio-economic status. This information is important to update current population trends and their needs. Previous literature on socio-demographics reveals characteristics and patterns. Wilhelm Stanis et al. (2009b) conclude that overall, constraints are greater

for racially diverse groups, especially Hispanic/Latino visitors. This study also concludes that important constraints for Latina women were focused around safety concerns. Ries et al. (2008) conclude the economic environmental influences result in the lack of financial means and transportation constraints to a park. These constraints may apply to Sacramento-Central Valley residents and are measured through the CA Opinions and Attitudes Survey on Outdoor Recreation mail/online survey.

Park visitation does differ between Non-Hispanic and Hispanic groups as Hispanics visit more often and Non-Hispanics stay longer. Cronan et al. (2008) when examining Latino immigrants and their use of parks for physical activity, report that their physical activity takes place in a park, at home, at different parks/recreation areas, a fitness center, and at school. This example supports the conclusion that Hispanic groups visit parks often. Another interesting finding from Cronan et al. is that physical activity is more common at parks that are close to urban areas as opposed to rural areas. Considering the geography of the Sacramento-Central Valley this may be true for Sacramento, but not true for a large majority of residents in the valley.

Physical activity levels do differ between Non-Hispanic and Hispanic groups as Hispanics are more vigorously active. The Cronan et al. (2008) study suggests the Latina men and women report higher levels of activity than in other studies. In relation to physical activity in parks, there is previous literature that supports this concept. As seen in the results of this current study, the Wilhelm Stanis et al. (2009a) study also shows that the majority of respondents participate in moderate to vigorous activity at the park during the last 12 months. Many implications are evident through Bruton et al. (2011), Kruger et al. (2007), and Wilhelm Stanis et al. (2009a) for the promotion and measurement of

physical activity in parks, as well as the collaboration of parks and recreation with public, community, and health organizations.

Understanding the characteristics of the population being served is important as parks and government spaces are a public service. Relating to the first research question of demographics, this population is mostly White or Hispanic and of a very low socio-economic status. Now knowing the racial and financial backgrounds of these participants, public administrators may continue relevant services and/or update services in need. For example, further research on the constraints of these participants might lead to an improvement that could enhance visitation or physical activity.

Knowing the behaviors of the population being served is also important for park and recreation administrators. The second and third research questions focus on behaviors through segmentation. This study concludes that park visitation does differ between Non-Hispanic and Hispanic groups as Hispanics visit more often and Non-Hispanics stay longer. It is also found that physical activity levels differ between Non-Hispanic and Hispanic groups as Hispanics are more vigorously active. The implications from this information indicate that parks are still used by residents, especially for facilitating physical activity. Using this information, park and recreation professionals should consider promoting to these segmented groups as well as collaborating with public health agencies. Research could also go a step further by asking participants what they like or dislike at the parks and what improvements could be made to meet these unsatisfied needs.

Some limitations could have impacted the results of this study. Due to the fact that this was conducted through a telephone survey, it is possible that the survey sample

was affected. Using the telephone allows people to hang-up or not respond due to caller identification. It also means that there could be a selection bias through the people that are willing to participate. Lastly, the statistical findings are based off of the respondent rates, which vary from question to question.

The purpose of this study was to conduct a secondary analysis of the socio-demographics and physical activity levels of Sacramento-Central Valley residents from the 2012 California Opinions and Attitudes Survey on outdoor recreation. This senior project has contributed to the body of knowledge of the recreation, parks, and tourism field. It has studied current characteristics and trends of the Sacramento-Central Valley population, which is relevant to the park and recreation administrators of that region. The information gathered from this study contributes to the relevant significance of socio-demographics, park visitation, physical activity in park settings, and subsequently, public health. This information should be used for public administration to make improvements or further investigate the needs of this population.

Conclusions

Based on the findings of this study, the following conclusions are drawn:

1. The majority of respondents were White or Hispanic, middle-aged to senior status, married, and part of a low socio-economic status.
2. Park visitation does differ between Non-Hispanic and Hispanic groups as Hispanics visit more often and Non-Hispanics stay longer.
3. Physical activity levels do differ between Non-Hispanic and Hispanic groups as Hispanics were more vigorously active.

Recommendations

Based on the conclusions of this study, the following recommendations are made:

1. Continue relevant services that are successfully used and cater to the local community.
2. Update services to branch out and reach the unmet needs of the population.
3. Promotion and marketing should focus on these segmented groups of users.
4. Promotion and marketing should use this information to market physical activity in park settings for healthy lifestyles.
5. Parks and recreation agencies should use this information to collaborate with public health organizations.

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TOC APPENDICES

Appendix A

Questionnaire

12-5245 CALIFORNIA OUTDOOR RECREATION TELEPHONE SURVEY

Survey on Public Opinions and Attitudes on Outdoor Recreation in California

Q. Q30A :

Q30A. Which of the following best describes your age? **READ LIST**

SELECT ONE:

1. 18 to 24
2. 25 to 34
3. 35 to 44
4. 45 to 54
5. 55 to 64
6. 65 or better

DK RF

Q. Q32 :

Q32. INTERVIEWER CODE GENDER:

SELECT ONE:

1. Male
 2. Female
-

Q. Q3 :

Next, we'd like to ask you some questions about activities you do while at parks. By park

we mean public parks, forests, lakes, rivers, beaches and open spaces.

Q3. Within the LAST MONTH (i.e. last 30 days), did you visit a park or outdoor recreation area?

1. Yes

2. No

DK RF

ASKED IF Q3 = NO / DK :

Q. Q3A :

Q3A. How about the LAST SIX MONTHS? (did you visit a park or outdoor recreation area?)

1. Yes

2. No

DK RF

ASKED IF Q3A = NO / DK :

Q. Q3B :

Q3B. How about the LAST 12 MONTHS? (did you visit a park or outdoor recreation area?)

1. Yes

2. No

DK RF

ASKED IF Q3B = NO / DK :

Q. Q3C :

Q3C. When was the last time you visited a park or outdoor recreation area? **DO NOT READ**

SELECT ONE:

1. 1 to 2 years ago (up to 2 years)
2. 2 to 3 years ago (up to 3 years)
3. 3 to 4 years ago (up to 4 years)
4. 4 to 5 years ago (up to 5 years)
5. 5 or more years ago
6. NEVER VISITED A PARK

DK RF

ASKED IF Q3=YES (visited in last month) :

Q. Q4 :

Q4. How many days in the LAST MONTH (i.e., last 30 days) did you visit a park or outdoor recreation area?

SELECTABLE RANGE 1 - 31

Number of days

DK RF

ASKED IF visited at some time (Q3/Q3A/Q3B/Q3C) :

Q. Q5 :

Q5. DURING your LAST park or outdoor recreation area visit, how much time did you spend there?

IF "1 DAY" ASK HOW MANY HOURS

PLEASE ENTER NUMBERS ONLY, i.e. "8 and a half" = 8.5

SELECT ALL THAT APPLY:

MINUTES _____

HOURS _____

DAYS _____

DK RF

ASKED IF visited at some time (Q3/Q3A/Q3B/Q3C) :

Q. Q6A :

Q6A. How frequently did you use one or more parks or recreation areas during the past

12 MONTHS? READ IF NEEDED

SELECT ONE:

1. Two or more times per week
2. About once a week
3. Once or twice a month
4. Several times a year (**3-11 times**)
5. Once or twice a year, or

6. Not at all

DK RF

ASKED IF Q5 ANSWERED:

Q. Q12A :

Q12A. Of those {Q5 RESPONSE (DAYS / HOURS / MINUTES)} you said you spent in a park DURING your LAST park visit, how much of that time did you spend being physically active? By physically active we mean doing any physical movement rather than sitting, such as walking and biking.

PLEASE ENTER NUMBERS ONLY, i.e. "8 and a half" = 8.5

SELECT ALL THAT APPLY:

MINUTES / HOURS / DAYS _____

DK RF NA

ASKED IF Q5 ANSWERED:

Q. Q12B :

Q12B. Of those {Q12A RESPONSE (DAYS / HOURS / MINUTES)} - how much of that time did you spend doing vigorous activities for at least 10 minutes at a time, such as running, aerobics, a sport event like soccer, or anything else that causes large increases in breathing or heart rate?

PLEASE ENTER NUMBERS ONLY, i.e. "8 and a half" = 8.5

SELECT ALL THAT APPLY:

MINUTES / HOURS / DAYS _____

DK RF NA

ASKED IF OS("Q5_MIN OR OS("Q5_HRS OR OS("Q5_DAY :

Q. Q12C :

Q12C. Of those {Q12A RESPONSE (DAYS / HOURS / MINUTES)} - how much of that time did you spend being moderately active, by doing any physical movement rather than sitting that increases your heart rate such as brisk walking, bicycling, playing with kids or dog.

PLEASE ENTER NUMBERS ONLY, i.e. "8 and a half" = 8.5

SELECT ALL THAT APPLY:

MINUTES / HOURS / DAYS _____

DK RF NA

Q. Q27 :

Q27. And now a few last questions for classification purposes. Your answers will remain confidential. What is the highest grade or level of education you have completed? **DO**

NOT READ, UNLESS PROMPTING IS NEEDED

SELECT ONE:

1. Did not graduate high school
2. High school graduate
3. Some college but no degree
4. Associate degree
5. Bachelor's degree
6. Master's degree
7. Professional degree (i.e. MD, JD, DDS, etc.)

8. Doctorate degree (i.e. PhD)

DK RF

Q. Q27A :

Q27A. What is your marital status? **DO NOT READ, UNLESS PROMPTING OR CLARIFYING IS NEEDED**

SELECT ONE:

1. Single, never married
2. Married
3. Living with partner
4. Separated
5. Divorced
6. Widowed

DK RF

Q. Q29 :

Q29. Please stop me when I read the category that best describes your total annual household income before taxes. Is it... **READ LIST**

SELECT ONE:

1. Under \$20,000
2. \$20,000 to under \$35,000
3. \$35,000 to under \$50,000
4. \$50,000 to under \$75,000
5. \$75,000 to under \$100,000
6. \$100,000 to under \$150,000

7. \$150,000 to under \$200,000

8. \$200,000 or more

DK RF

Q. Q30 :

Q30. What is the racial or ethnic background (or backgrounds) that best describes your household?

CHECK ALL THAT APPLY - CLARIFY HISPANIC or LATINO

SELECT ALL THAT APPLY:

1. Hispanic or Latino of Mexican Descent
2. Other Hispanic or Latino (for example, Guatemalan)
3. White (non-Hispanic)
4. Black or African American
5. Asian
6. Native Hawaiian or Other Pacific Islander
7. American Indian or Alaska Native
8. Some other race [**SPECIFY BELOW**]

DK RF

Q. Q30_OTH :

Q30_OTH. **SPECIFY "OTHER" HERE.**

READ ONLY IF NEEDED: "What OTHER race or ethnic backgrounds?"

OPEN-ENDED

Appendix B

Script

12-5245 CALIFORNIA OUTDOOR RECREATION TELEPHONE SCRIPT

Q. INTRO :

INTRO. Hello. My name is {IVER name} from IntelliQ Research. I'm calling on behalf of California State Parks, and California Polytechnic State University (in) San Luis Obispo ("San Lewis O bis Po.")

We are conducting a survey about all California parks and recreation facilities. This is not a sales call, and the survey will take about 10 minutes to complete.

First, I need to be sure I'm speaking to the correct person in your household, to be sure we're getting a random cross-section of age groups. Who is 18 years old or older, and had the most recent birthday, would that be you? **IF NOT:** "Is that person at home?"

KEEP GOING TO NEXT MOST RECENT BIRTHDAYS UNTIL SOMEONE CAN DO THE SURVEY. IF NO ONE AVAILABLE, SCHEDULE A CALLBACK FOR WHEN SOMEONE WILL BE AVAILABLE.

Do you have a few minutes now to answer these questions?

IF NOT NOW, ASK FOR THE BEST TIME TO CALL BACK.

Q. EIGHTEEN :

Again, I just need to confirm that you are 18 years of age or older.

1. Yes
2. No [ASK FOR SOMEONE WHO IS 18+]

Q. CONSENT :

This survey is being conducted to obtain your ideas on how to improve recreation opportunities for the residents of California and to understand park use among adults.

This survey is about all parks and recreation facilities in California, not just State Parks.

You are not required to answer any question you do not wish to answer, and your responses will remain completely anonymous and confidential. This call may be monitored by my supervisor and recorded for quality control purposes only.

Participation in the survey implies that you consent to take part in this research. Do you consent to proceed with the survey?

1. Yes
2. No

IF NOT 18 OR DOES NOT CONSENT :

Q. TERM0 :

TERM0. Thank you very much for your time. Those are all the questions we have for you today. **END CALL**